State of Ohio Environmental Protection Agency

June 10, 1997

Antidegradation Information

3745-1-05

Part B

Applicability

Introduction

Anyone wanting to discharge wastewater into surface waters of the state must meet certain requirements. In general, the antidegradation rule applies to all new or increased discharges from wastewater treatment facilities and for a series of other specific circumstances.

This informational document was prepared for a wide range of individuals, from consultants and environmental organizations to regulators and interested public. It is intended to help identify what situations are covered under the new rule in an easy to read and understandable format. Many example projects and commonly asked questions are answered.

The antidegradation rule encompasses many subjects. In order to provide the most detailed information, this document was written with the assumption the reader has a general understanding of the outline and content of the rule. Many of the terms used in this document are defined in a specific manner. Please refer to the rule (Part A) for a complete listing of terms and definitions.

Part B

Part B is broken down into two sections, Applicability B(1) and Responsibility of the Applicant B(2). B(1) describes in detail the types of situations that are covered by the rule. B(2) outlines the information that must be submitted if your project is covered under any of the situations in B(1). This document will focus only on part B(1)- Applicability.

Part B (1) - Applicability

This section outlines seven categories (a-g) describing which projects would be covered by the rule. The following is a general outline of the seven categories:

a. Existing source- have a current NPDES permit.
b. New Source- no NPDES permit, expansions.
c. Have a current discharge and no NPDES permit.
d. Applying for a 401 certification.
e. Non-point source activity.
f. Construction activities in or near a stream bed.
g. Transferring wastewater to a different receiving stream.

Remember, your project could be covered by more than one category, so throughly review all of them. As you will see, each category might have several cases that will need to be addressed.

a. The first category is for facilities that have an NPDES permit that is being either reissued or modified. There are four cases in this category that need to be looked at to determine if you are covered by the rule. Pose the cases as questions, and if you answer yes to any of the questions your project would be covered by the rule. Remember, answer these questions on a pollutant by pollutant basis.

i. The first case deals with permits that have 30-day mass limitations for the specific pollutant.

Q: Will there be an increase in any current 30-day mass limit in your permit?

ii. The second case deals with permits that do not have a 30-day **mass** limit but have a 30-day average **concentration** limit for the specific pollutant.

Q: Will there be an increase in the product of the 30-day concentration and design flow of the facility?

Example: Wall-Eye Industries is expanding its current production line. As a result they will need to increase their discharge of non-contact cooling water from 1.0 million gallons per day (mgd) to 1.5 mgd. Their current NPDES permit has a 30-Day concentration limit of 0.038 mg/l of total residual chlorine (TRC). After Wall-Eye conducted a

water quality review it was determined that a limi t of 0.032 mg/l of TRC would protect water quality with the additional discharge o f cooling water. To determ ine if Wall-Eye's expansion was covered by the rule they compared their current discharge product to thei r expanded discharge product:

Current	*Expanded*
0.038 X 1.0 = ***0.038***	*0.032 X 1.5 =* ***0.048***

The product of the 30 Day concentration and design flow wil l increase as a result of the expansion. Therefore, Wall-Ey e determined they were covered by the rule.

iii. The third case deals with permits that do not have a **30-day mass nor 30-day concentration** limits but have **daily maximum** limits for the specific pollutant.

Multiply the maximum concentration limit by **0.73** then use same procedure outlined under item (ii).

iv. The fourth and last case deals with permits with no limits for the specific pollutant. This case becomes far more complicated to determine if you are covered by the rule. Items a, b and c below, all relate to publicly owned treatment works (POTW), while item d is specifically for facilities other than a POTW.

Q: Will a permit limit be needed or will any pollutant be present in greater amounts as a result of any one of the four activities described below?

POTW CHANGE	a	A physical change of a POTW or a change in the operations of a POTW.
SIU ADDITION	b	The addition of a significant industrial user.
SIU CHANGE	c	A physical change of the wastewater treatment or a change in operations of a significant industrial users industrial process.
INDUSTRIAL	d	A physical change of the wastewater treatment plant or a change in operations of the industrial process for facilities other than a POTW.

For items a and d ...

Most treatment plants physically change or change the operation of their plant to achieve better treatment or to expand its operation. If the changes will result in the discharge of more or new pollutants, you would be covered by the rule.

For items b and c you will probably ask **..., "How do I know when a permit limit will be needed?"**

A separate document is being developed on how industrial user (IU) permitting will be changed to incorporate antidegradation provisions for IUs that will increase pollutants discharged from POTWs.

Q: What if I add an industrial user that will discharge pollutants that I currently have a permit limit for?

A: As long as your POTW has capacity to treat the discharge and comply with your current NPDES permit limits, antidegradation would not apply.

b. The second category is for new sources not already in existence as of October 1, 1996. In other words, a brand new source(new permit, new facility, new source). Plant expansions, upgrades and sewer extensions upstream from CSOs and SSOs can also fall in this category. For expansions and upgrades, only the portion of new flow would be subject to new source standards. If the project would result in a net increase in the discharge of any pollutant, you would be covered by the rule. However, a detailed investigation of exclusions and waivers should be conducted before you start your social and economic analysis. All new sources will be covered by the rule in some aspect.

c. The third category is for <u>new sources already in existence as of October 1, 1996.</u> This category is broken down into three cases:

i. If you are discharging under the terms of a NPDES permit issued on or after July 1, 1993, use B(1)(a) to determine if you are covered.

ii. If the new source is comprised entirely of stormwater

runoff from an existing site or facility whether under permit or not, use B(1)(a) to determine if you are covered.

iii. Except as provided in **ii**, if the new source is currently discharging from a treatment works without a NPDES permit the net increase is the discharge of a pollutant above the product of the 99th percentile of actual concentrations and the design flow of the facility.

Under scenario **iii**, to determine whether or not your facility is covered by the rule you will need to know what concentration limits you will be requesting in your NPDES permit application and the original design flow of the treatment plant. Also, you will need current analyses of the effluent for all pollutants for which the discharge is being requested. For each pollutant calculate the product of the concentration (limitation or current analysis 99th percentile) and the original average daily design flow (ADDF) of the treatment plant. If the treatment will be expanding the flow above the original design flow should be treated solely as a new source.

Q: Is the product of the 99th percentile concentration (actual) and the ADDF greater than the product of the permit limitation (proposed) and the ADDF? or;

Is 99th pctl x ADDF > Permit Limit(concentration) x ADDF?
(Actual) (Proposed)

A: If you answer yes to this question, your proposal would not be considered a degradation. The proposed discharge will result in less pollutants being discharged, therefore, the project would not be covered by under antidegradation.

Example: Smalltown WWTP has a design flow of 0.04 million gallons per day . Smalltown has been operating their wastewater plant for many years without a NPDES permit. Permit limits for NH3-N, $CBOD_5$ and TSS of 1, 10 and 12 mg/l respectively meet best available demonstrate d control technology (BADCT) criteria and were shown, based o n modeling, to be more protective than permit limits based solely on a wasteload allocation. The highest values observed of the thre e analyses conducted by Smalltown were 6 for $CBOD_5$, 0.8 for NH3-N and 8 for TSS. Using the percentile conversion (Table 1), the current analysis' yielded 99th percentiles of:

Table 1.

To determine the 99th percentile for less than ten samples, the 99th percentile is equal to the highest observed value times the appropriate multiplier listed in the following table:

n	multiplier	n	multiplier
1	6.2	5	2.3
2	3.8	6	2.1
3	3.0	7	2.0
4	2.6	8	1.9
		9	1.8

	Analysis x	*Conversion*	= *99th percentile*
CBOD5	*6*	*3.0*	*18*
NH3-N	*0.8*	*3.0*	*2.4*
TSS	*8*	*3.0*	*24*

Pollutant	*99th pctl X ADDF (Actual)*	*Permit X ADDF (Proposed)*	*Deg?*
CBOD5	*18 x .04 = 0.72*	*10 x .04= 0.4*	*No*
NH3-N	*2.4 x .04= 0.096*	*1 x .04 = 0.04*	*No*
TSS	*24 x .04 = 0.96*	*12 x .04= 0.48*	*No*

The current discharge at the 99th percentile concentrations are muc h greater than what is being proposed, therefore, this project would no t result in a degradation.

d. **Q:** What if my project requires 401 certification?

A: Any application requiring 401 certification automatically meets the applicability section of the rule and therefore is required to complete an antidegradation review. There are no exclusions or waivers for 401 certifications.

e. The fifth category applies to non-point source activities.

The rule applies to any non-point source activities that Ohio EPA has separate authority to impose mass limitations.

However, at this time no activities are covered under this category. Non-point source activities would need to be permitted on a load basis. This category was included in the antidegradation rule to meet federal requirements.

f. The sixth category involves the placement of fill or placement of a sewerage system in or near a stream bed.

Q: Will the activity result in lowering water quality based on biological criteria?

This category specifies changes in units of biological indices to determine if you are covered by the rule. This topic is further discussed in a separate document and is specifically related to stream crossings, construction in riparian areas and similar activities which could alter aquatic habitat. This category only applies to activities that require a permit to install or NPDES permit.

g. The final category applies to transfers of treated wastewater to a different receiving waterbody or treatment works. The best way to approach this category is to see if you meet either of the following:

All transfers of wastewater to a different receiving waterbody or treatment works are applicable **unless** the transfer is to an existing outfall that has the one of the following:

- the transfer of wastewater does not require an increase or new limits in the transferee's NPDES permit; and the transferee's design capacity does not have to be increased.
- the transferee is subject to best available technology (BAT) or new source performance standard (NSPS) and alternative limitations are being sought under 40CFR 420.03.

Part B (2)- Documentation

Q: What do I do now?

If your project is covered under any of the above 7 categories there are certain information requirements that must be submitted as part of your application. The extent of the information

required can vary greatly depending on whether or not your project meets any exclusions or waivers. Before you begin work on gathering information a careful examination of the waivers and exclusions should be completed. If your project meets an exclusion, the amount of information that needs to be submitted is significantly reduced. Waivers are more complex and the applicant must document why the wavier should be granted. Some waivers give relief on information requirements while others waive minimum treatment requirements. Projects that do not meet any exclusions or waivers must submit all information as outlined in Part B(2) of the rule. Please see the information document on waivers. For more information on exclusions and antidegradation, contact your local Ohio EPA District Offices.

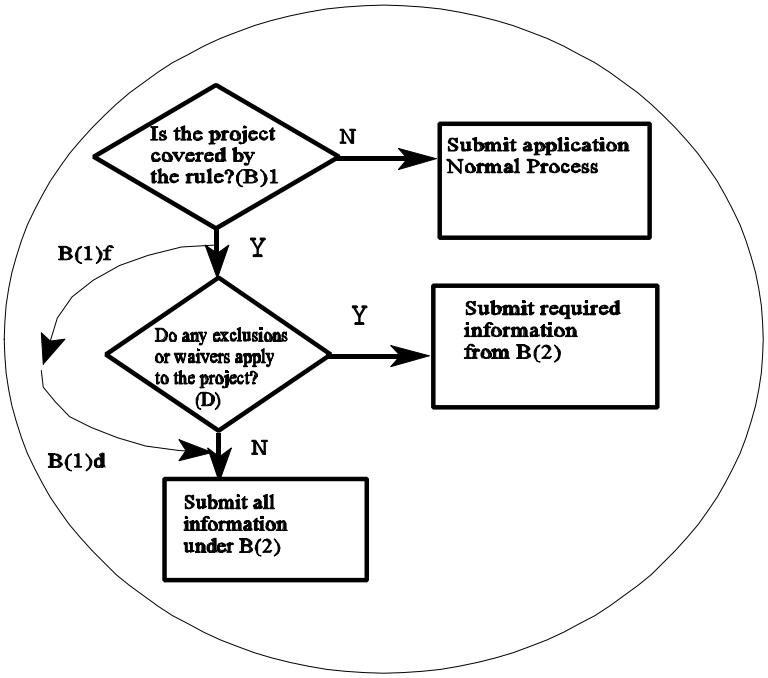

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Diagram 1. The flow chart shows that the rule does not always flow from B(1) to B(2). A review of exclusions and waivers (Part D of the rule) should be completed before you move onto the information submittal requirements (Part B(2)).